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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,813	01/16/2004	Daniel Robert Blakley	200315907-1	6580

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INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

HOLMES, REX R

ART UNIT	PAPER NUMBER
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3762

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/758,813

Applicant(s)

BLAKLEY, DANIEL ROBERT

Examiner

Rex Holmes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. The rejection of claims 6, 8, 16-18, and 20 under 35 USC 112 has been withdrawn based on Applicant's amendments to the claims filed 11/24/06.
2. The objection of the Specification has been withdrawn based on Applicant's amendments to the specification filed 11/24/06. The amendment to the specification has been entered.
3. Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

4. The drawings were received on 11/24/06. These drawings are acceptable.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-15 and 27-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Nearing et al. (U.S. Pat. 6,169,919 hereinafter "Nearing").
7. In regards to claims 1, 10, 27 and 30, Nearing discloses referencing an electrocardial waveform, identifying a trigger, waiting for a period of isoelectric activity, sampling the wave, and dynamically referencing the voltage over a period of the

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selected beat that can utilize a computerized system (e.g. Col. 1, ll. 66-67 & Col. 2, ll. 1-20).

8. In regards to claims 2-4, 11-12, 28-29 and 31, Nearing discloses that the isoelectric/ zero value is the TP segment and that the segment is determined from the r-wave (e.g. Col. 6, ll. 42-45), followed by negative S peak and the T wave (e.g. Fig. 1).

9. Examiner notes that when the trigger is the R peak and the sample is "TP" interval, the electrocardial waveform inherently contains a negative S peak and a T-wave included between the trigger and the sample.

10. In regards to claims 5 and 6, Nearing discloses that the TP interval is at least 0.2 seconds long (e.g. Col. 6, ll. 50-52) and the recording period can be determined either automatically or manually (e.g. Col. 6, ll. 34-60).

11. In regards to claim 7, Nearing discloses that it uses the isoelectric TP value as a baseline value instead of using a reference value from a reference electrode (e.g. Col. 12, ll. 8-16).

12. In regards to claims 8 and 32, Nearing discloses that the isoelectric value applied to the waveform is sampled from the TP interval, which is an isoelectric interval in the electrocardial waveform (e.g. Col. 1, ll. 66-67 & Col. 2, ll. 1-2).

13. In regards to claim 9, Nearing further discloses that it detects frequency modulations in the waveform (e.g. Col. 13, ll. 36-39).

14. In regards to claim 13, Nearing discloses that the isoelectric period can be the PQ segment which is followed by the QRS complex (e.g. Col. 4, ll. 3-4).

15. In regards to claim 14, Nearing discloses that the reference value is determined from the rate of change of the isoelectric value of TP (e.g. Col. 2, ll. 1-20).

16. In regards to claim 15, Nearing discloses a processor configured to run the system as disclosed above (e.g. Fig. 9, "904").

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 16-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nearing in view of Ekstrom (U.S. Pat. 3,868,567).

19. Regarding claims 16-26, Nearing discloses the claimed subject matter as disclosed in detail above and a digital system (e.g. Col. 10, ll. 25-30), but Nearing fails to show a analog circuit capable of creating a reference voltage. However Ekstrom discloses a method and apparatus for analysis of an isoelectric value in an electrocardial waveform, which includes a clock (48), analog sampler (52), amplifier/generator (44) and a peak detector/trigger (42). The system of Ekstrom samples an electrocardial waveform, finds an isoelectric sample within the waveform for a reference voltage, subtracts the reference voltage from the waveform using an amplifier, and outputs the final waveform (e.g. Col. 3, ll. 44-67 & Col. 4, ll. 1-40).

20. Regarding claims 16-26, Nearing discloses the claimed invention except for the analog circuitry. Ekstrom teaches that it is known to use analog circuitry to detect and

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measure and isoelectric area of a electrocardial signal. Both Nearing and Ekstrom teach systems to analyze and filter electrocardial waveforms and thus teach of analogous art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the digital system for referencing electrocardial waveforms as taught by Nearing, with analog system as taught by Ekstrom, since such a modification would provide the electrocardial waveform with a analog system that filters and analyzes a electrocardial waveform in real time in a simplified fashion to reduce costs.

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rex Holmes whose telephone number is 571-272-8827. The examiner can normally be reached on M-F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on 571-272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Rex Holmes
Examiner
Art Unit 3762



George Evanisko
Primary Examiner
Art Unit 3762

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